

Title: Claim Rejections 35 U.S.C. 102.

OA4. A study of the response to office Action 5-8 will eliminate any apprehension of patent ability.

OA5. Response to Office Action 35 U.S.C. 102. Mold purpose, material, and shape.

Patent Number 5,251,866 Lord et al.

Lord et al. discloses a mold capable of forming through holes or slots within an article of manufacture.

1. Lord's mold is constructed of a plastic material. Plastic is not a useful material to accept molten lead which is the purpose of the applicant's mold.
2. Lord's mold is a multi-part mold. The applicant's mold is of unit construction.
3. Lord's mold is a device used to produce a foam part. Foam is not a typical ballast material such as the applicant's mold configures. The applicant's mold produces a lead ballast. Lead is generally accepted in the industry as a ballast material.
4. Lord's mold produces a part that can be removed from the mold by hand while the applicant's mold is constructed to withstand hundreds of degrees of heat, a swift, striking blow from a gloved hand on the hot aluminum handle against a hard smooth surface, which ejects the hot material from the mold. The ejection is performed after the lead has cooled to a solid state.
5. Lord's mold produces a part that does not exhibit through holes. A coverstock is placed in the bottom of the mold and the mold is filled with a foam material with the top or lid of the mold in place. The lid of the mold has a plurality of protrusions extending downward. The downward extending protrusions connected to the lid, are of a predetermined length to seat on the coverstock and to form voids in the foam. The foam sticks to the coverstock adjacent to the protrusions in the molding process. When the foam part is removed from Lord's mold, the presents of the lid protrusions form the walls of the voids in the foam and the coverstock forms the bottom of the voids in the foam. The so called through holes or slots within the foam part are blinded by the coverstock material and therefore are not through holes. The purpose of placing the coverstock under the voids in the foam casting process is for destruction testing of the coverstock. The applicant's mold produces a part with through holes, slots, or apertures through which a belting material is received.

OA 6. Response the Office Action 6. Ballasts in plurality.

Those skilled in the art, and others, are aware of prior art that places ballasts in plurality on a belting material and assume that the ballasts will be used in plurality as required for appropriate buoyancy adjustment. The examiners' plurality rejection is of high merit.

The question of plurality however, is included in most of the patents in the applicant's search as far back as William Crawford in 1899 patent number 617,675, Carl J. Di Julio in 1961 patent number 2,970,448, etc.. Hence, to satisfy the rejection, the applicant has removed claim 5 from claims. See claim 5: Canceled. No Substitution.

OA 7. Response to Office Action 7. Any number of weights.

A brief consideration of the drawing in patent number 4,455,718 by David L. Finnern, pages 1 and 2, Figs. 1,2 and 3 depict a series of ballasts on a weight belt designed to attach to a scuba tank and not to a diver's waist like the applicant's invention. Particular attention should be placed on the fact that Finnern's patent is a belt and not a ballast. The ballast that Finnern discusses is produced by others. Finnern suggests traveling to a dive location with his belt and no weights. Once on or near the dive location, rent or otherwise acquire the necessary ballasts or weights. This eliminates transporting the weights. Further, note that the ballast contains only two belt receiving slots and that the belt is not designed to encompass the diver about the waist. The applicant's design intention is to don the belt about the waist as in prior art. Also, Finnern's patent calls for standard two slot ballasts as indicated by his drawings. The fact that the belt has ballasts in plurality is common to weight belts and is considered prior art. The idea of attaching weights to a tank will indeed control buoyancy nicely. However, this is a dangerous device by its design noting reachability, retrieve ability, and replaceability in normal diving activity. When the Finnern patent was conceived, improved contemporary dive equipment of today did not exist. Further, not all diving that uses buoyancy control requires a scuba tank. Note also that the Finnern patent uses rubber, special hinge type buckles, and a pin which can be easily misplaced. Recollect the applicant's invention uses only aluminum for the mold, lead for the ballast of more than two apertures, a belting material, a standard quick release buckle and is attached to the diver about the waist. The term "about the waist" is from prior art and is used to help describe the use of the belt to those who are not skilled in the art and others.

OA 8. Response to Office Action 8. Ballast slots.

Walsh, Jr., discloses a devise with four (4) slits. The Walsh, Jr. devise is neither a ballast nor a ballast part nor is it depicted as a ballast or ballast part. See patent number 4,303,239 Richard G. Walsh, Jr., column 8, paragraph 20. The part of four (4) slits 22 that Walsh, Jr. discusses is a two function plastic part that reinforces the belt and holds the thigh exercise apparatus in place on a belt. The material in Walsh, Jr.'s thigh exercise apparatus that might be

considered ballast is in tubes, Fig. 8 of the drawings and disclosed in column 7, paragraph 25. The tubes are made of canvas or vinyl covered nylon and are filled with weighted matter such as sand or lead shot. The tubes are placed in pouches that are mounted to a canvas or vinyl covered nylon base that in turn leads to the flap that is riveted to the plastic d-pad. The flap is secured to itself encompassing the d-pad and belt combination within.

The applicant simulated a Walsh, Jr. unit to the plans and specifications of the Walsh, Jr. patent for testing. The tests revealed the resistance on the belt woven through the four slits in the plastic d-pad, riveted to the flap, and the flap enclosing the combination of the belt and the d-pad, makes the unit adjustable with only a passive physical effort as presented in Walsh Jr.'s patent. Walsh, Jr. calls this a "securement of stability to location" in column 8, paragraph 35-40.

The applicant's testing proved that Walsh, Jr.'s patent is a very good design for what it is intended. There is a huge gap however, between the Walsh, Jr. mechanism and the non-slip unit of the applicant. Simply stated, the Walsh, Jr. plastic d-pad easily adjusts its passive hold on the belting material while the non-slip ballast will not slip.

The applicant testified several times in his application that his invention has more than two belt receiving slots. No one in prior art makes this claim. In column 8, paragraph 20-25, Walsh, Jr. indicates "containing four (4) slits 23 through which the support belt 25 passes" and is the only other entry of slits in the Walsh, Jr. patent.

The resistance of d-pad to belt on the Walsh, Jr. invention instills enough resistance which will make the exercise apparatus slip easily for manual adjustability. The resistance of ballast to belting on the applicants non-slip dive ballast invention acts as a brake which is of non-slip discipline. The applicant's invention teaches adequate resistance of ballast to belting material to cause a non-slip condition and that the ballast to belting be easily adjustable. The non-slip ease of adjustment is by feeding the belting material through the apertures one by one across the ballast until the desired location is obtained on the belting.

The Walsh, Jr. invention is an excellent thigh muscle exercise device which has no relevance with buoyancy control, scuba or free diving, or underwater activities.

Title: Claim Rejection 35 U.S.C. 103(a).

OA 10. Response to Office Action 10. Obviousness.

The applicant has observed discrepancies in the Office Action entries that should be addressed and once organized will clear up many issues.

Issue 1. Selisky discloses, Fig. 1, a weight 10 formed of lead with any number of weights being utilized on a belt. The applicant has noted that weights or ballasts in plurality and like phrases are used in most of the patents found in

his search and has therefore canceled such claim. Those skilled in the art would know to use the amount or number of weights or ballasts necessary to control buoyancy.

On page 2 paragraph 55-60 of Selisky's patent, number 4,789,270, Selisky states, a pair of belt receiving slots 20-21 are formed through the body of the weight 10. The applicant considers a pair of belt receiving slots, 20-21 as meaning two slots or less. Selisky goes on to discuss the slots 20-21 throughout the patent description. At no juncture in the patent language does Selisky mention having more than two slots, therefore, Selisky makes it unmistakably clear that he means two slots or less.

Issue 2. Walsh, Jr. discloses, Fig 9, a "ballast" or pad woven on a belting material and possessing more than two belt receiving slots so as to allow for a firm positioning of the "ballast" or pad upon the belting material. After studying the Walsh, Jr. patent, the applicant was unable to find any mention of the word "ballast". Walsh, Jr. does however, disclose a plastic d-pad containing four (4) slits in column 8 paragraph 20-25. A belt is woven through the four slits in the d-pad, the d-pad is riveted to a vinyl flap, and the flap is sealed around the belt/d-pad combination. There is no mention of more than two belt receiving slots in any prior art and is only addressed in the application of the applicant. Selisky even avidly points out on page 4 paragraph 40 claim number 5, the divers weight as set forth in claim 4 and the spacing of said slots from the respective ends being of a first dimension and the spacing of said slots from one another being of a second dimension double of said first dimension. An examination of the belt cross section in Fig. 6 of the Walsh, Jr. patent reveals routing of the belt as it penetrates the slits at a forty five (45) degree angle and departs at a forty five (45) degree angle. Entry and exit angles of the belt through the plastic d-pad total one hundred and eighty (180) degrees of resistance. One hundred eighty (180) degrees of resistance is adequate for a yielding hold on a belting material that requires a passive effort for adjustment, but, falls far short of a non-slip condition when compared with the applicant's invention. The Walsh, Jr. d-pad appoints one hundred eighty (180) degrees of resistance while the applicant's non-slip dive ballast initiates a minimum of five hundred and forty (540) degrees of resistance. Note also that the d-pad is made of plastic which is not normally used as a ballast material. The non-slip dive ballast of the applicant is made of lead. Lead is definitely a ballast material.

Issue 3. The d-pad of the Walsh, Jr. patent is not a ballast nor is it a part of a ballast nor does Walsh, Jr. depict it as such. The d-pad is designed as a belting reinforcement and a devise to aid in locating an exercise apparatus on a belt. While the d-pad may appear similar to the non-slip dive ballast of the applicant, appearance is where it all ends. Walsh, Jr.'s d-pad is an excellent design for what it is intended which is to passively hold the location of an exercise devise on a belt and be adjustable with little physical exertion. The Walsh, Jr. d-pad should not be compared to the applicant's non-slip dive ballast with it's aggressive non-slip distinction. Further, the d-pad is enclosed which indicates that there is little effort required for adjustment. In comparison, the applicant's non-slip dive ballast can

not be encased or it would be rendered non adjustable sighting inaccessibility. The non-slip dive ballast accessability is essential for ballast to belt adjustment.

OA11. Response to Office Action 11. Obviousness.

Office Action 11 brings discrepancies to view that the applicant will attempt to clarify.

View 1. Finnern discloses, Fig. 2, a weight 50 formed of lead with any number of weight being utilized on a diving belt 10. The applicant acknowledges that more than one weight on a dive belt has been prior art since the year 1899 as disclosed by William K. Crawford, patent number 617,675, cover page, paragraph 15. Crawford stated, I have invented the herein-described belt, in which a plurality of pockets are provided containing removable weights of peculiar construction.

View 2. Finnern's patent is a belt and not a ballast nor weight. It should be noted that the Finnern patent uses conventional weights produced by others and is not part of his patent. Also, since there is no dive ballast nor weight in prior art with more than two belt receiving slots, a conventional weight will contain two or less belt receiving slots. The applicant repeatedly states, more than two belt receiving slots or apertures in his application. See Finnern, patent number 4,455,718 and observe cover page, ABSTRACT. In the second sentence of ABSTRACT, Finnern discusses a weight strap formed to utilize conventional lead diving weight. Further, on page 3 paragraph 20-30, Finnern says, conventional lead weights 50 may be positioned upon the elongate strap members 30 and 32 by weaving the strap members 30 and 32 through the slot like apertures 52 formed in the lead weights 50. Find Fig. 2 of Finnern's drawings and observe the weight 50 with it's two belt receiving slots 52. The issue being two or less belt receiving slots. In the second or third sentence of Finnern's claims, he writes, at least one conventional diving weight having an aperture extending there through. The applicant recognizes the words, an aperture as meaning one aperture. Finnern repeats the thought in claim 8 where he calls for a weight of one slot.

View 3. Walsh, Jr. discloses, Fig. 9, a "ballast" or pad woven on a belting material and possessing more than two belt receiving slots so as to allow for a firm positioning of the "ballast" or pad upon the belting material.

The applicant has searched the Walsh, Jr. patent and was unable to detect any mention of "ballast" or more than two belt receiving slots.

The only possible tie of the applicant's non-slip dive ballast and Walsh's thigh muscle exerciser is on page 8 paragraph 20-25 of patent number 4,303,239. Walsh, Jr. describes a plastic devise that he calls a d-pad with four (4) slits. The two purposes of the d-pad are to reinforce the belting material and to aid in locating the thigh exercise

apparatus on a belt. Shown in Walsh, Jr.'s drawings on page 2 of 2, Fig 7, is the flap of the weighted exercise devise which folds over the belt and connects to itself. Without added strengthening aid to the belt such as the plastic d-pad, the belt would collapse into a roll or fold when in use. Further, the d-pad with four (4) slits that Walsh, Jr. unveils in his drawings on sheet 2 of 2, Fig. 6, reveals the course for a belting material woven through the d-pad inside the flap encasement. This belting path yields a route of one hundred eighty (180) degrees (4 times 45 degrees) of resistance through the d-pad and encasement that nicely functions as a passive restriction between the d-pad and the belt. The minor restrictive effect between the belt and d-pad combined with the entrapment by the flap of the thigh exercise setup is an excellent design that creates an adjustable condition that requires only minimal physical exertion to implement any adjustment. In contrast, so also is the applicant's non-slip dive ballast of superior design which requires the belting material to be fed through each belt receiving aperture one at a time to establish the ballast location on the belt, hence, a non-slip discipline. Further, an aggressive minimum of five hundred forty (540) degrees of resistance is being applied by the non-slip system of more than two belt receiving slots or apertures as seen in the applicant's drawings on page 2 of 3, Fig. 3 and Fig. 4. The more belt receiving slots or apertures within the ballast, the more secure the ballast will be to the belt. However, more than two slots is ample to instill the non-slip mode. Know that security of diving equipment in any diving endeavor is crucial, sighting life or death concerns. While the Walsh, Jr. idea and that of the applicant are both excellent in their field, the challenges that they resolve are diametrically opposed in practice and should not be compared. Rather than being parallel in purpose, the two ideas are perpendicular in application. A review of the applicant's drawings on page 2 of 3, Fig. 2 and Fig. 3, will teach that the minimum of six (6) ninety (90) degree angles of the belt through the more than two slots or apertures totals five hundred forty (540) degrees of resistance. Dive ballasts of prior art which contain two or less belt receiving slots can be relocated on a belt gravitationally with mere incidental handling. Also, prior art ballasts which will remain in place on a belt do so with the aid of screws, bolts, springs, clips and many other non lead parts. The quantum leap innovation of the non-slip dive ballast is produced with lead only. Further, to encase the non-slip dive ballast of the applicant like the Walsh, Jr. design would increase the degrees of resistance to seven hundred twenty (720) degrees. Seven hundred twenty (720) degrees of resistance is far more than is necessary to entice a non-slip environment. Also, to encase the non-slip dive ballast and belt combination like Walsh, Jr. has done, would render the non-slip system completely non adjustable blamed on inaccessibility into the encasement with the reminder that the belt needs to be fed through each slot one at a time to achieve ballast location on the belt.